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D407-667-205TRN
Job Sheet 199414



Part No: D407-667-205TRN

Job Qty: 1 pcs

Part Name: Crosstube Turning Detail



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 8/22/19

Job Tracking No:

Due Date: 9/4/19

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: DWG REV G IPP Rev:A 08-03-06 new issue DD verified by:ec IPP Rev B 08.04.02 Removed polish EC verified by: DD IPP Rev:C 08-08-19 revE as per dwg DD verified by:EC

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Lead Time	Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier			
100	Mori Seiki TL-40 - 1	1 pcs		9/4/19	1.00	3.13	Mori Seiki TL-40 - 1			
110	QC 2	1 pcs		9/4/19	0.00	0.00	QC 2 - 1			
							QC 2 - 12			
							QC 2 - 14			
							QC 2 - 17			
							QC 2 - 19			
							QC 2 - 2			
							QC 2 - 20			
							QC 2 - 22			
							QC 2 - 23			
							QC 2 - 25			
							QC 2 - 32			
							QC 2 - 33			
							QC 2 - 35			
							QC 2 - 39			
							QC 2 - 4			
							QC 2 - 40			
							QC 2 - 44			
							QC 2 - 45			
							QC 2 - 48			
							QC 2 - 49			
							QC 2 - 50			
							QC 2 - 51			
							QC 2 - 52			
							QC 2 - 57			
							QC 2 - 62			
							QC 2 - 63			
							QC 2 - 8			
							QC 2 - 66			
							QC 2 - 64			

DAS
66
9-89

2019/10/12

DAS
66
9-89

2019/10/12

					QC 2 - 65	
					QC 2 - 5	
					QC 2 - 71	
					QC 2 - 73	
					QC 2 - 69	
120	Mori Seiki TL-40 - 1 - B4B	1	9/4/19	1.00 3.13	Mori Seiki TL-40 - 1 - B4B	DAS 66 2019/10/17 9-89
130	QC 2	1	9/4/19	0.00 0.00	QC 2 - 1	
		pcs			QC 2 - 12	
					QC 2 - 14	
					QC 2 - 17	
					QC 2 - 19	
					QC 2 - 2	
					QC 2 - 20	
					QC 2 - 22	
					QC 2 - 23	
					QC 2 - 25	
					QC 2 - 32	
					QC 2 - 33	
					QC 2 - 35	
					QC 2 - 39	
					QC 2 - 4	
					QC 2 - 40	
					QC 2 - 44	
					QC 2 - 45	
					QC 2 - 48	
					QC 2 - 49	
					QC 2 - 50	
					QC 2 - 51	
					QC 2 - 52	
					QC 2 - 57	
					QC 2 - 62	
					QC 2 - 63	
					QC 2 - 8	
					QC 2 - 66	DAS 66 2019/10/17 9-89
					QC 2 - 64	
					QC 2 - 65	
					QC 2 - 5	
					QC 2 - 71	
					QC 2 - 73	
					QC 2 - 69	
140	QC 8	1	9/4/19	0.00 0.00	QC 8 - 12	
		pcs			QC 8 - 14	
					QC 8 - 17	
					QC 8 - 20	
					QC 8 - 25	
					QC 8 - 3	
					QC 8 - 32	
					QC 8 - 33	
					QC 8 - 35	
					QC 8 - 39	
					QC 8 - 4	
					QC 8 - 44	
					QC 8 - 45	
					QC 8 - 49	
					QC 8 - 58	
					QC 8 - 8	
					QC 8 - 9	
					QC 8 - 68	

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170 Packaging 3-1 - Stock - B4B	1 pcs	9/4/19	0.00 0.00	QC 7 - 24	
				QC 7 - 43	
				QC 7 - 61	
				QC 7 - 81	
				Packaging 3 - 1 - B4B	
				Packaging 3 - 2 - B4B	
				Packaging 3 - 3 - B4B	
				Packaging 3 - 4 - B4B	
				Packaging 3 - 5 - B4B	
				Packaging 3 - 6 - B4B	
				Packaging 3 - 7 - B4B	
				Packaging 3 - 8 - B4B	
				Packaging 3 - 9 - B4B	
				Packaging 3 - 10 - B4B	
				Packaging 3 - 11 - B4B	
				Packaging 3 - 12 - B4B	
				Packaging 3 - 13 - B4B	
				Packaging 3 - 14 - B4B	
				Packaging 3 - 15 - B4B	
				Packaging 3 - 16 - B4B	
				Packaging 3 - 17 - B4B	
				Packaging 3 - 18 - B4B	
				Packaging 3 - 19 - B4B	
				Packaging 3 - 20 - B4B	
				Packaging 3 - 21 - B4B	
				Packaging 3 - 22 - B4B	
				Packaging 3 - 23 - B4B	
				Packaging 3 - 24 - B4B	DB 11/11/2019
				Packaging 3 - 25 - B4B	
				Packaging 3 - 26 - B4B	
				Packaging 3 - 27 - B4B	
				Packaging 3 - 28 - B4B	
				Packaging 3 - 29 - B4B	
				Packaging 3 - 30 - B4B	
				Packaging 3 - 31 - B4B	
				Packaging 3 - 32 - B4B	
				Packaging 3 - 33 - B4B	
				Packaging 3 - 34 - B4B	
				Packaging 3 - 35 - B4B	
				Packaging 3 - 36 - B4B	
180 QC 21 - SA	1 pcs	9/4/19	0.00 0.00	QC 21 - SA - 21	
				QC 21 - SA - 70	
				QC 21 - SA - 53	NOV 1 1 2019

Part Op 100 - Mori Seiki CNC Lathe Large) 1-Fill tube with sand & install plugs DT8531 on both ends as per Folio FA248 3-Turn Descriptions: first side as per Folio FA248

110 - (QC2- Inspect parts off machine FAI/FAIB)

120 - (Mori Seiki CNC Lathe Large) 1-Turn second side as per Folio FA248 4-Scribe part # and batch # using vibrating stylus as per Dwg D407-667-245

130 - (QC2- Inspect parts off machine FAI/FAIB)

140 - (QC8- Inspect parts - second check)

145 - (Crosstubes) Grind off circumferential machining marks longitudinally.

150 - 1- handfinish X-TUBE INSIDE AND OUT 2- ACID ETCH X-TUBE INSIDE AND OUT. USE RED SCOTCH BRITE

160 - (QC7-Inspect Chemical Conversion Coat)

170 - Identify and stock in kanban rack

180 - (QC21- Final Inspection - Work Order Release)

Job BOM

Part / Item	Component Name	Quantity	Operation
D6011-115	Crosstube Material	1 pcs (1 ea)	100-Mori Seiki TL-40 - 1

Container
E139420

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
100-Mori Seiki TL-40 - 1	D6011-115	1	48	0
Part Specifications				
Specifications could not be found.				

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Container No: S222021



Part: D407-667-205TRN

Job No: 199414

Serial No/Batch: S222021

Revision: G

Inspector:

Exp Date:

Instructions:

Date: 10/11/19

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DART AEROSPACE LTD		Work Order:	199414
Description: Crosstube Assembly		Part Number:	D407-667-245
Inspection Dwg: D407-667-245 Rev: G		Page 1 of 2	

FIRST ARTICLE INSPECTION CHECKLIST

	Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.490	+0.005/-0.000	2.493	✓		CNC-04	
	1.832	+0.005/-0.000	1.837	✓		CNC-08	
	1.838	+0.005/-0.000	1.843	✓			
	1.892	+0.005/-0.000	1.897	✓		↓	
	2.052	+0.005/-0.000	2.057	✓		CNC-04	
	2.206	+0.005/-0.000	2.208	✓		↓	
	2.521	+0.005/-0.000	2.525	✓		↓	
	2.633	+0.005/-0.000	2.638	✓		↓	
	4.10	+/-0.030	4.113	✓		CNC-08	
	4.978	+/-0.030	4.976	✓		"	
	2.040	+0.000/-0.010	2.036	✓		CNC-08	
	0.125	+/-0.010	.125	✓		"	
	R0.063	+/-0.010	.063	✓		AG	
	R0.500	+/-0.010	.500	✓		"	
SIDE B	2.490	+0.005/-0.000	2.494	✓		CNC-04	
	1.832	+0.005/-0.000	1.837	✓		CNC-08	
	1.838	+0.005/-0.000	1.843	✓		↓	
	1.892	+0.005/-0.000	1.897	✓		↓	
	2.052	+0.005/-0.000	2.057	✓		CNC-04	
	2.206	+0.005/-0.000	2.211	✓		↓	
	2.521	+0.005/-0.000	2.526	✓		↓	
	2.633	+0.005/-0.000	2.638	✓		↓	
	4.10	+/-0.030	4.10	✓		CNC-08	
	4.978	+/-0.030	4.978	✓		"	
	2.040	+0.000/-0.010	2.036	✓		CNC-08	
	0.125	+/-0.010	.124	✓		"	
	R0.063	+/-0.010	.063	✓		AG	
	R0.500	+/-0.010	.500	✓		"	
	112.91	+/-0.020	112.89	✓		Tape	

Item	QTY	PART NUMBER	DESCRIPTION
	-245		
	X	D407-867-245	CROSS-TUBE ASSEMBLY (407 HIGH AFT)
1	1	D8011-115	CROSS-TUBE
2	2	D2873-043	NUT PLATE
3	2	D2873-045	NUT PLATE
4	1	D2894-1	SUPPORT
5	2	D3180-1	CHAFING SHIELD
6	2	D3595-063-430	RUBBER CUSHION
7	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
8	4	MS21820-22	CLAMP
9	2	MS21820-25	CLAMP (OR MS21820-24)
10	AR	SCOTCH-WELD DP480	EPOXY ADHESIVE, 3M SCOTCH-WELD
11	AR	PROSEAL 890	SEALANT

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D8011-115
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT CROSS-TUBE PER DART QSI 005 4.2
TO APPLY PRIME AND APPLY CLEAR COAT ONLY
FOR HATCHED AREAS (ZN A6-2), MASK AS REQUIRED
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D407-867-245" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 27.7 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE
- 9) RUN-OFF PART, BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 6 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSS-TUBE PER QSI 038.
- 12) INSTALL D2894-1 CENTER SUPPORT USING A 0.04" TO 0.07" THICK LAYER OF SCOTCH-WELD DP480 PER QSI 015. LET CURE FOR 24 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21820-25 CLAMPS WITH D3595-063-430 RUBBER CUSHIONS TO SECURE D2894-1 SUPPORT ON TOP SIDE OF THE CROSS-TUBE. ENSURE CLAMPS ARE OPPOSITE CROSS-TUBE SUPPORT.
- NOTE: MS21820-24 CLAMPS CAN BE USED TO ACCOMMODATE VARYING DIAMETERS.
- 14) ENSURE THERE IS A MINIMUM OF 1.5 THREADS IN SAFETY ON THE NUTS.
EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) APPLY A THIN COAT OF PROSEAL 890 ON INSIDE CONCAVE SURFACE OF D3180-1 CHAFING SHIELDS AND LET CURE PER MANUFACTURER'S INSTRUCTIONS. INSTALL PROSEAL 890 ONTO CROSS-TUBE. BE SURE TO ELIMINATE ANY AIR GAPS.
- 16) INSTALL D3180-1 CHAFING SHIELDS SO THAT OVERLAP IS 60 TO 70 DEGREES FROM BOTTOM OF CROSS-TUBE OPPOSITE D2894-1 SUPPORT.
- 17) TORQUE CLAMPS 80 TO 100 IN-LB. TORQUE CLAMPS ON D3180-1 CHAFING SHIELD 40 TO 50 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER ADHESIVE HAS CURED FOR 24 HOURS.

RELEASED

2015 APR 08
Q7 84N 15-557

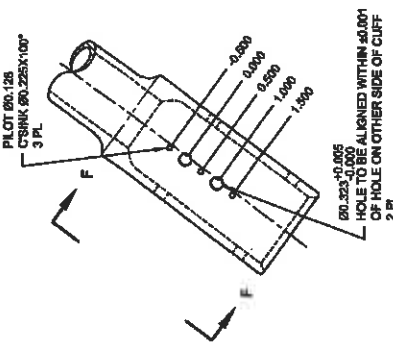
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WORK ORDER

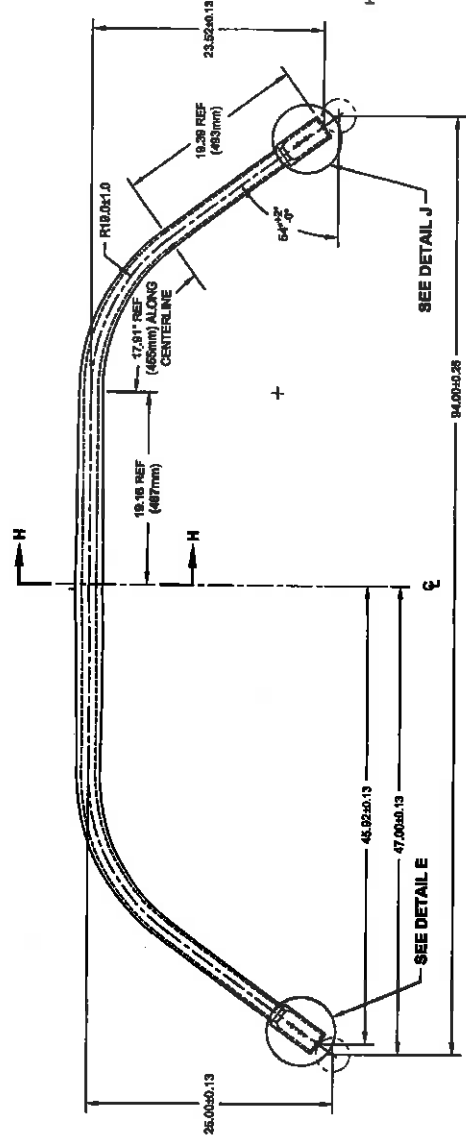
199414 MWS

19-08-22

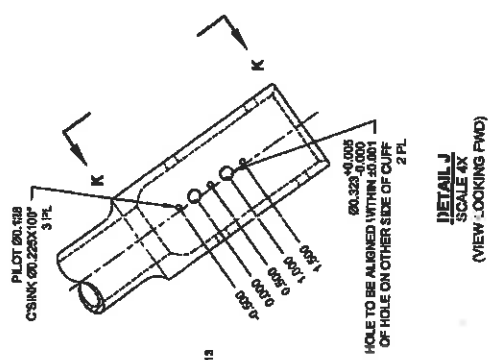
G	INCORP. DED'S D407-867-245-F1/F2 (ZN D8-1, A6-1, D5-2, B6-2, C6-2); 8.80 WAS 8.53 (ZN D5-2); TORQUE REDUCED FOR CHAFING SHIELD (ZN A6-1); FINISH REVISED TO ALLOW MANUFAC. FLEXIBILITY (ZN C8-1)	RF	15.03.20
F	REFORMAT NOTES TO NEW STANDARDS (ZN B8-1); RELOCATED FLAG #6 (ZN A6-3) PER NCR 210; REMOVED REF. & ADD TOLERANCES (ZN C8-3, C4-3 & D2-3)	RF	08.11.08
E	8.02 AND 8.53 WERE 9.40 AND 9.80 (ZN D6-2); REORGANIZED VIEWS AND REFORMATED DRAWING TO CURRENT STANDARDS. REASONS: CLAMPS MOVED 0.375 TOWARD CL. TO ELIMINATE INTERFERENCE WITH AIRCRAFT MOUNTS. REFERENCE: PAR009-21 AND ECR#1225	MB	08.07.24
D	ADD VIEW FOR OEM SHID HOLES, ROTATE ORIENTATION OF CLAMPS SECTION F-F, REMOVE -451 ABRASION STRIP, ADD MAGNIBOND 6398, ADD CUSHION	PH	07.02.07
C	ADD HOLES AND NUT PLATES FOR COMPATIBILITY WITH BHT/AA SKIDTUBES	PH	05.07.26
B	ADD CHAFING SHIELD	CP	03.05.21
A	NEW ISSUE	CP	02.05.13
REV.	DESCRIPTION	BY	DATE
DESIGN	Q7		
DRAWN	RF		
CHECKED	Q7		
MFG. APPR.	Q7		
APPROVED	Q7		
DE APPR.	Q7		
DATE	15.03.20		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. D407-867-245			
SHEET 1 OF 4			
TITLE CROSS-TUBE ASSY (407 HIGH AFT)			
SCALE NTS			
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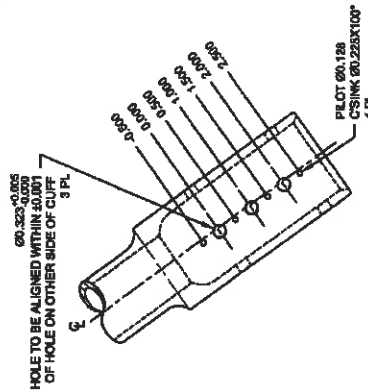
DETAIL E
SCALE 4X
(VIEW LOOKING FWD)



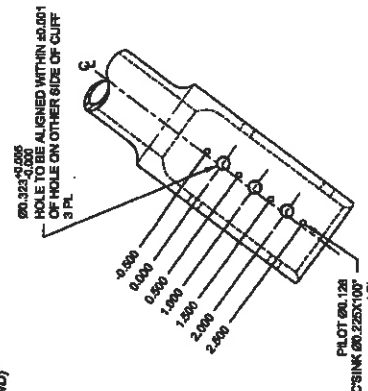
D407-667-405
BENDING AND DRILLING DETAIL
(VIEW LOOKING FWD)



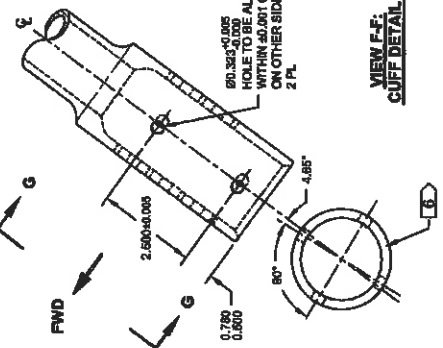
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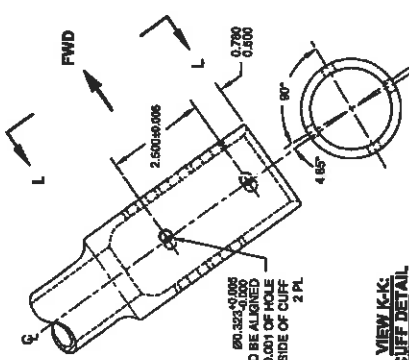
VIEW G-G
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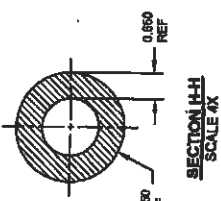
VIEW L-L
(VIEW LOOKING AFT, ROTATED)



VIEW F-F:
CUFF DETAIL



VIEW K-K:
CUFF DETAIL



SECTION H-H
SCALE 4X

RELEASED
2015 APR 09

DESIGN	REV. G
DRAWN	DRAWING NO.
CHECKED	D407-667-245
MEG. APPR.	TITLE
APPROVED	CROSSTUBE ASSY (407 HIGH AFT)
DATE	15.03.20
	NTS

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Entered:

Date:

WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No.

Route update only

☐

Job: _____ Part No. _____		DISPOSITION Rework ☐ ☐ Scrap ☐ ☐ Use-as-is ☐ ☐		DEPARTMENT/PROCESS Skid-tube ☐ ☐ ☐ ☐ ☐ ☐ Machining ☐ ☐ ☐ ☐ ☐ ☐ Large Fab ☐ ☐ ☐ ☐ ☐ ☐ Cross tube ☐ ☐ ☐ ☐ ☐ ☐ Small Fab ☐ ☐ ☐ ☐ ☐ ☐ Finishing ☐ ☐ ☐ ☐ ☐ ☐ Eng. (Non-AW) ☐ ☐ ☐ ☐ ☐ ☐ Prod. Eng. Coord. ☐ ☐ ☐ ☐ ☐ ☐ Rec/Store/Packaging ☐ ☐ ☐ ☐ ☐ ☐ Engineering ☐ ☐ ☐ ☐ ☐ ☐ Water Jet ☐ ☐ ☐ ☐ ☐ ☐ Supplier ☐ ☐ ☐ ☐ ☐ ☐ Quality ☐ ☐ ☐ ☐ ☐ ☐				Date: _____ Sequence #: _____ QTY Affected: _____		MRB (QS1042)					
Description Work Order Deviation				Disposition											
Root Cause Operator ☐ ☐ ☐ Manufacturing Process ☐ ☐ ☐ Equip/Tooling ☐ ☐ ☐ Handling/Preservation ☐ ☐ ☐ Material ☐ ☐ ☐ Product Improvement ☐ ☐ ☐ Process Improvement ☐ ☐ ☐ Human Factors ☐ ☐ ☐				FAULT CATEGORY Contamination ☐ ☐ ☐ ☐ ☐ ☐ Misaligned/off center ☐ ☐ ☐ ☐ ☐ ☐ BOM/Route ☐ ☐ ☐ ☐ ☐ ☐ Broken/Damage/Defect ☐ ☐ ☐ ☐ ☐ ☐ Incomplete/Unclear Instructions ☐ ☐ ☐ ☐ ☐ ☐ Drill Holes ☐ ☐ ☐ ☐ ☐ ☐ Fit/Function ☐ ☐ ☐ ☐ ☐ ☐ Pressure/Forced ☐ ☐ ☐ ☐ ☐ ☐ Bending ☐ ☐ ☐ ☐ ☐ ☐ Crushing ☐ ☐ ☐ ☐ ☐ ☐ Cracks ☐ ☐ ☐ ☐ ☐ ☐ Crimp/Kink/Ripple/Wave/Twist ☐ ☐ ☐ ☐ ☐ ☐ Marks/Chatter ☐ ☐ ☐ ☐ ☐ ☐ Mislabeled ☐ ☐ ☐ ☐ ☐ ☐ Other/Details: _____				Power Loss/Surge ☐ ☐ ☐ ☐ ☐ ☐ Folio/Program ☐ ☐ ☐ ☐ ☐ ☐ Grain Direction ☐ ☐ ☐ ☐ ☐ ☐ Weld ☐ ☐ ☐ ☐ ☐ ☐ Wrong Stock Pulled ☐ ☐ ☐ ☐ ☐ ☐ Out of Sequence ☐ ☐ ☐ ☐ ☐ ☐ Off-set/Set-up ☐ ☐ ☐ ☐ ☐ ☐				Positioned Wrong ☐ ☐ ☐ ☐ ☐ ☐ Outside Tolerance ☐ ☐ ☐ ☐ ☐ ☐ Drawing ☐ ☐ ☐ ☐ ☐ ☐ Finish ☐ ☐ ☐ ☐ ☐ ☐ Part Lost/Missing ☐ ☐ ☐ ☐ ☐ ☐ Misread ☐ ☐ ☐ ☐ ☐ ☐			
				Completed By				Lead hand / Supervisor							
				QC / QA Coordinator				QC / QA Coordinator							